STRUCTURAL
TIMBER
EXPERTS
SINCE 1992

Techlam Product Installation Guide

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timber redefined

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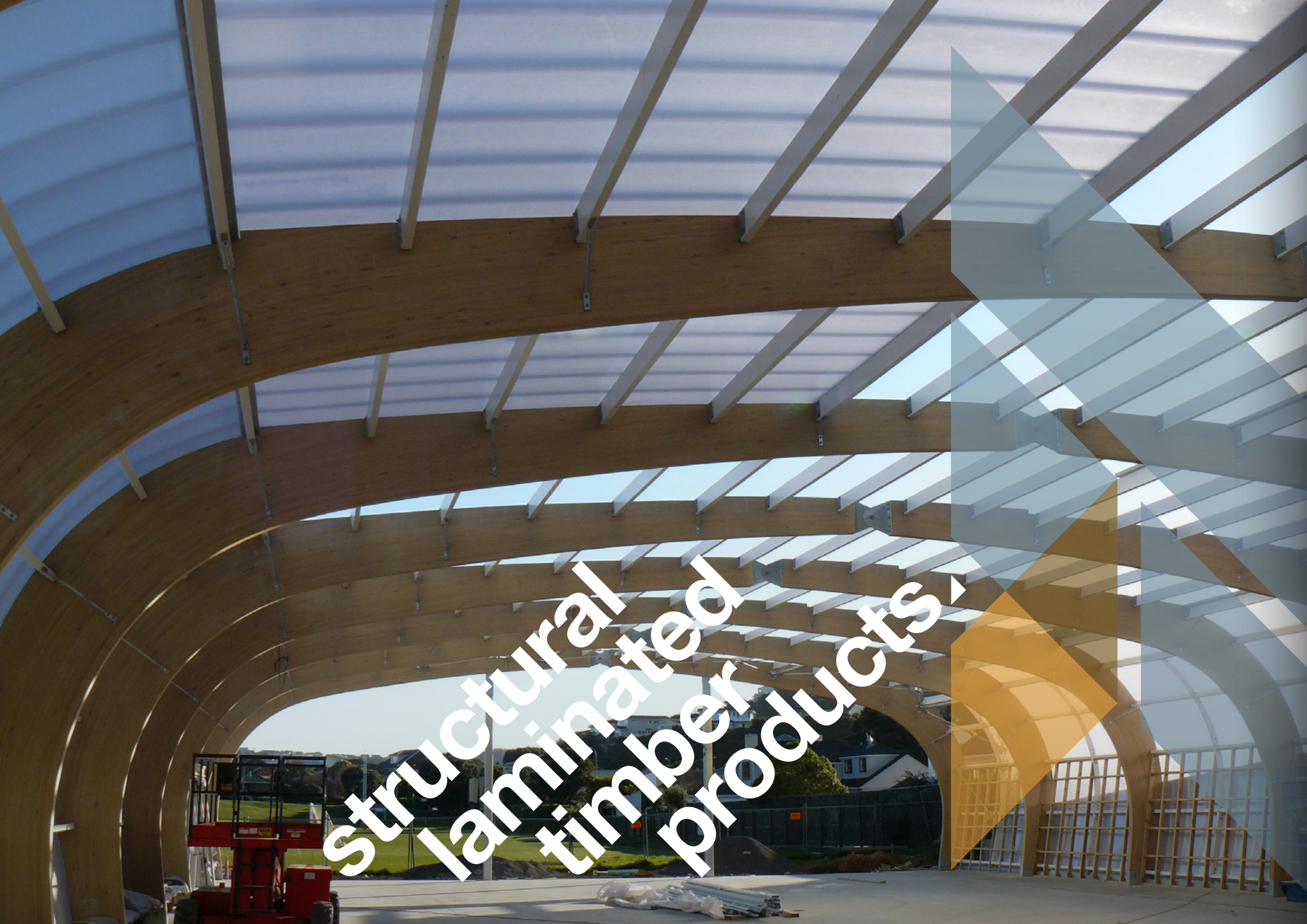
structural
laminated
timber
products

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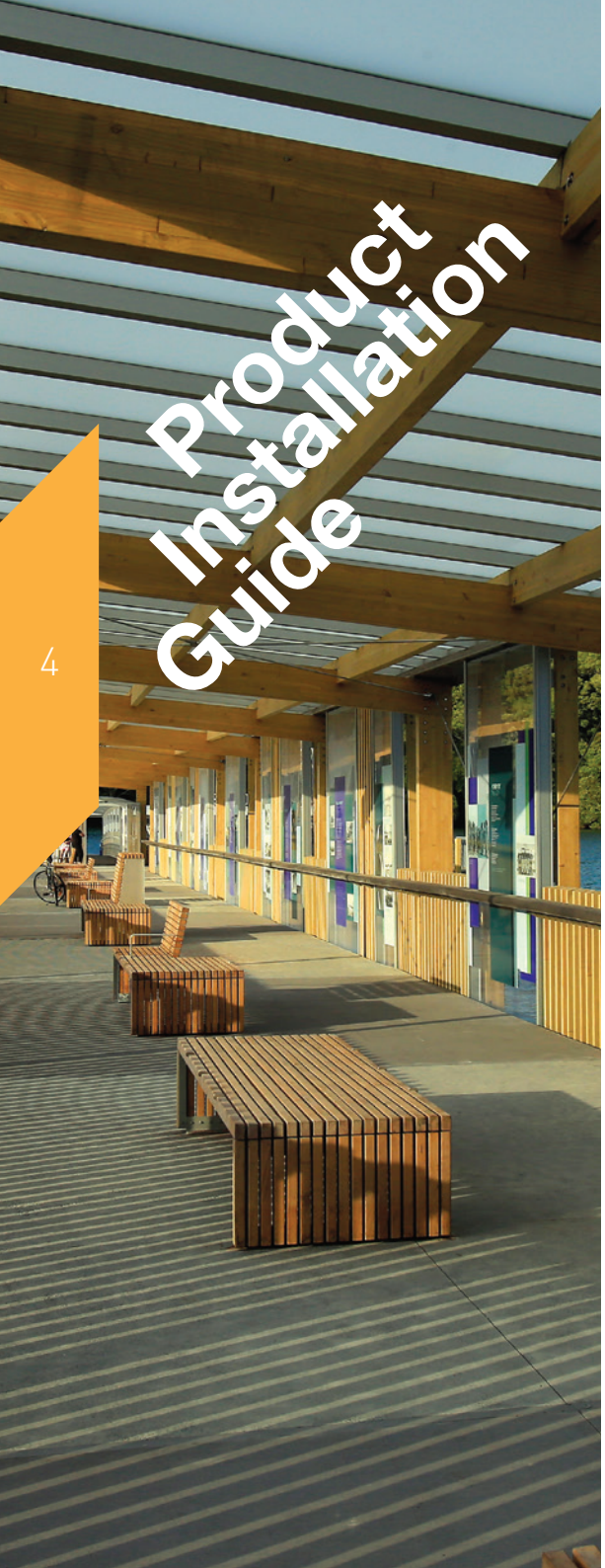
NOTE: This manual is intended strictly as a guide only.
If in doubt, we strongly recommend that you seek appropriate professional advice.



1 Product Description

1.1 Structural Flooring

- Techlam Laminated T&G flooring (with/without V) is a durable, structural flooring system that is manufactured in accordance with AS/NZS 1328:1998 and AS5068. It can be supplied with a Grade A or Utility finish.
- Flooring is manufactured from random lengths of timber (Radiata Pine), which are finger jointed and glued together to form continuous laminations.
- Supplied in two standard widths (300mm and 240mm) and thickness range of 42mm - 135mm. This flooring can be manufactured to any specified length.
- Techlam GL10 Laminated T&G Flooring Span Tables provide the engineered solutions specific for use and degree of allowable vibration.

1.2 Architectural Portals

- Techlam laminated timber portal frames are a structural solution, providing large spans to other materials such as steel roofing.
- Portals are available in a number of configurations including knee portals, plywood gusset and many other types depending on the clients' needs.
- Techlam Portals are subject to specific engineered design on an individual project basis
- Portals can be manufactured in various grades for visual appearance as specified in the design requirements
- Techlam Laminated Timber Portals can be used with standard or specific metal fabricated connections in accordance with AS/NZS 1170: 2002.

1.3 Standard Posts & Beams

- Techlam Laminated Timber Posts and Beams are a durable, structural building element manufactured either to meet the specific client needs or selected from the Techlam engineered selection tables.
- The posts and beams are made from random length pieces of timber, which are finger-jointed and glued together to form continuous laminations. Posts and beams are manufactured mainly from Radiata pine and Douglas fir, or other species subject to gluing and strength characteristics.
- Posts and beams are available in appearance grades A – C, dependent on the required visual appearance and surface finish coating. They are also available in structural grades GL8, GL10 and GL12, as defined in NZS3603:1993(2) and AS/NZS1328:1998.

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- Beams (including rafters & lintels) are available in 3 widths and a range of depths ranging from 135mm to 585mm. The selection tables represent the Techlam standard beam range, which can be varied by specific design.
- Posts are available under two ranges: - EziPost® and Premium Post. Both range in sizes from 88mm x 88mm - 270mm x 270mm. The selection tables represent the Techlam standard post range, which can be varied by specific design.
- Techlam Laminated Timber Posts and Beams can be used with standard or specific metal fabricated connections as specified in AS/NZS 1170: 2002.

2 Scope of Use

2.1 Structural Flooring

- Techlam Laminated T&G Flooring can be used in all forms of construction where the structure relies on AS1170:2002.
- Techlam Laminated T&G Flooring Span Tables are based on 'Live load' categories (KPa) and vibration limitations, which are subject to the use of the space/building.
- The design and use must be in accordance with the Techlam GL10 Laminated T&G Span Tables (refer to www.techlam.co.nz).

2.2 Architectural Portals

- Techlam Laminated Timber Portals can be used in all forms of construction where the structure relies on AS/NZS 1170: 2002.
- Techlam Portals are subject to specific engineered design on an individual project basis
- Manufacturing is subject to project specific environmental conditions.

2.3 Standard Posts & Beams

- Techlam Laminated Timber Posts and Beams can be used in all forms of construction where the structure relies on AS/NZS 1170: 2002.
- The design and use must be in accordance with Techlam specifications, design criteria and selection tables.
- Manufacturing is subject to project specific environmental conditions

3 General Installation

3.1 Structural Flooring

- The various thicknesses of Techlam Structural Flooring enables the installer to reduce the number of support members required, resulting in less unsightly mechanical fixings.
- The reduced number of support members and fixings provides a clean, crisp and aesthetically pleasing warm finish.
- Fixing of Techlam flooring can be achieved by either nailing or screwing. Refer to NZS 3604 (2011) Sec 2.4 Fastenings and Fabrication & table 2.2 where applicable.
- Installation of the flooring sections is very simple. Simply order the required lengths, place onto joists, and screw or nail into place. With folded steel support beams, floor fixings can be almost invisible – just screw from underneath. This completely eliminates the need for screws on the surface.
- Techlam Flooring is supplied with a small tolerance between the tongue and the groove. This allows the joint to be clamped tight.
- The planks are supplied with the top surface un sanded. If a sanded finish is required to the top surface, it is normal to sand the surface after installation. This will remove any imperfections and small differences between planks.
- It is recommended that the flooring is laid and fixed plank by plank, with care taken to clamp each joint before fixing. This will help to reduce any issues with gaps between planks.
- As Techlam Structural Flooring is a timber product, some expansion and contraction will occur after installation. This is caused by the timber taking up or losing moisture dependent on environmental conditions. It is also recommended that flooring is stored fillet stacked on site in the conditions of use for at least a week or longer to allow the product to adjust to the ambient moisture content. This can help to minimise any movement.
- Techlam recommend that allowance is made during installation so that the product can expand if required. This can be achieved by discreet placement of control joints and a 10mm gap around the perimeter of the floor.
- Where a larger member thickness is specified, or where fixing from beneath is not feasible, it may be necessary to screw down from the top surface. In this situation, we recommend the use of SPAX partially threaded structural screws. These fixings can be fixed flush, or countersunk and capped or filled with matching timber filler. For further information on the SPAX range, see www.spaxpacific.com/products/#construction.

Note:

Ensure that flooring has been designed using the appropriate live loads (kPa):

Domestic	1.5kPa
Office/deck	2.5kPa
Storage	5.0kPa

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- Proprietary plates, mild steel galvanized straps and brackets can be used to suit the application. Lumberlok, Gang-Nail, Pryda and Tylok provide excellent detailed resources to assist the installer.
- Specific design fixings maybe specified where a building consent has been granted. These details must be followed by the installer.
- Elastomeric adhesives only shall be used if the tongue is to be glued.
- Techlam Structural Flooring should not be installed on timber supports where the moisture content exceeds 16% mc.

3.2 **Architectural Portals**

- Techlam Architectural Portals require specialized equipment for installation. The portal, foundation, connection fastenings and hardware are specific engineering design.
- The specific connections must be designed and detailed in their entirety and installed in accordance with the design documentation.
- The design of the Portal and associated hardware componentry must make due allowance for the product use in terms of climate zone, exposure and the required durability.

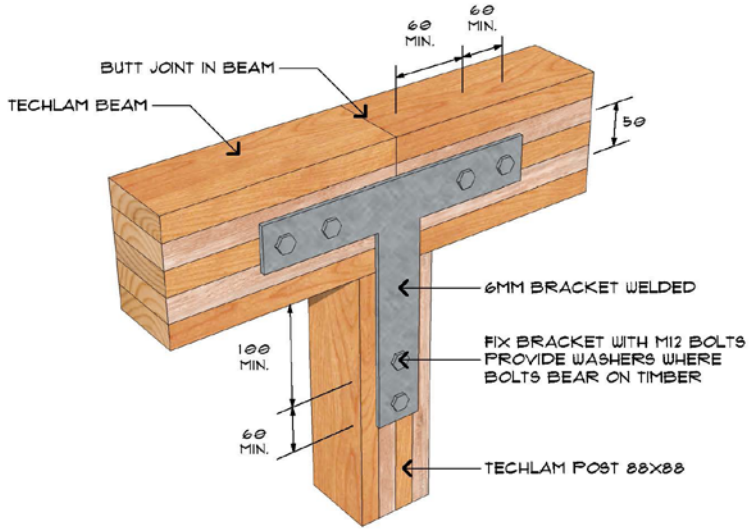
3.3 **Standard Posts & Beams**

- Posts and Beams can be installed (depending on the use) using standard proprietary connections fastenings and hardware or fully engineered design componentry. Where specific design connections are used, they must be designed and detailed in their entirety and installed in accordance with the design documentation.
- Proprietary plates, mild steel galvanized straps and brackets can be used to suit the application. Lumberlok, Gang-Nail, Pryda and Tylok provide detailed resources to assist the installer. The design of the posts, beams and associated hardware componentry must make due allowance for the product use, in terms of climate zone, exposure and the required durability.

4 Appropriate Skills Required

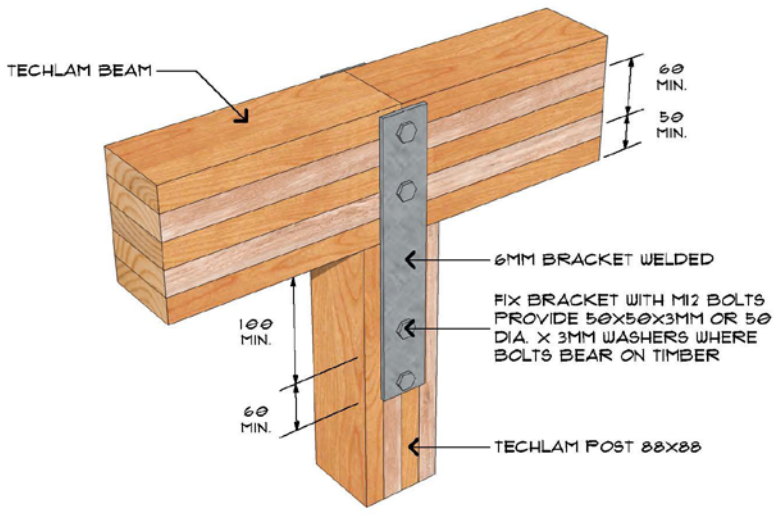
- Where restricted building work is identified, the installation of all Techlam products should be carried out or supervised by a Licensed Building Practitioner (LBP) who holds a Carpentry 1 Certificate.
- Where the construction has been identified as specific design, in accordance with AS NZS 1170 the works may be overseen or supervised by an IPENZ Registered Structural Engineer, who is familiar with the Techlam design.
- The Territorial Authority (Council) may impose conditions on the building consent that relate to the use and installation of Techlam products. All and any documentation contained in the consent documentation must be sighted prior to commencement of the installation.

5 Typical Structural Post to Beam Connection Examples



NOTE:
(1) CAPACITY 12.2KN FOR 1 BRACKET.
(2) CAPACITY 25.5KN FOR 2 BRACKETS.

BEAM/POST CONNECTION - TYPE A



NOTE:
(1) CAPACITY 6.8KN FOR 1 BRACKET.
(2) CAPACITY 13.7KN FOR 2 BRACKETS.

BEAM/POST CONNECTION - TYPE B

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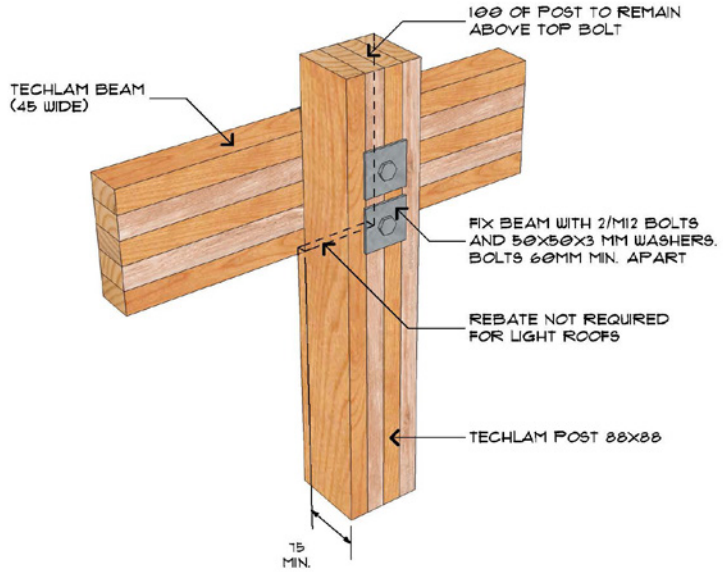
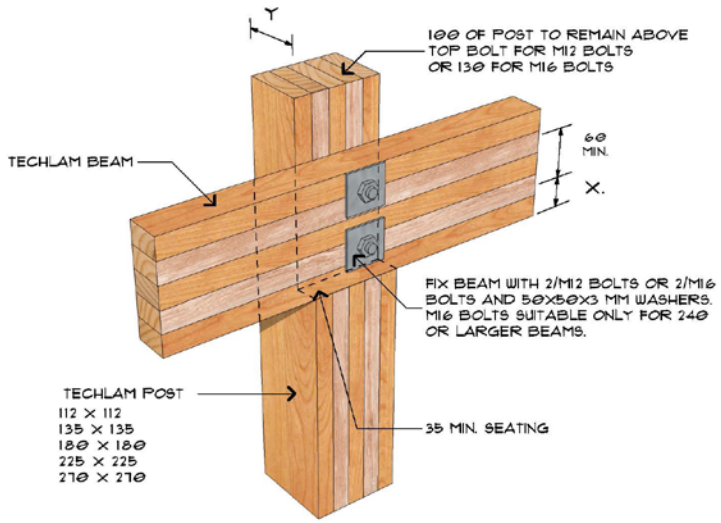


NOTE:
CAPACITY 6.8KN.

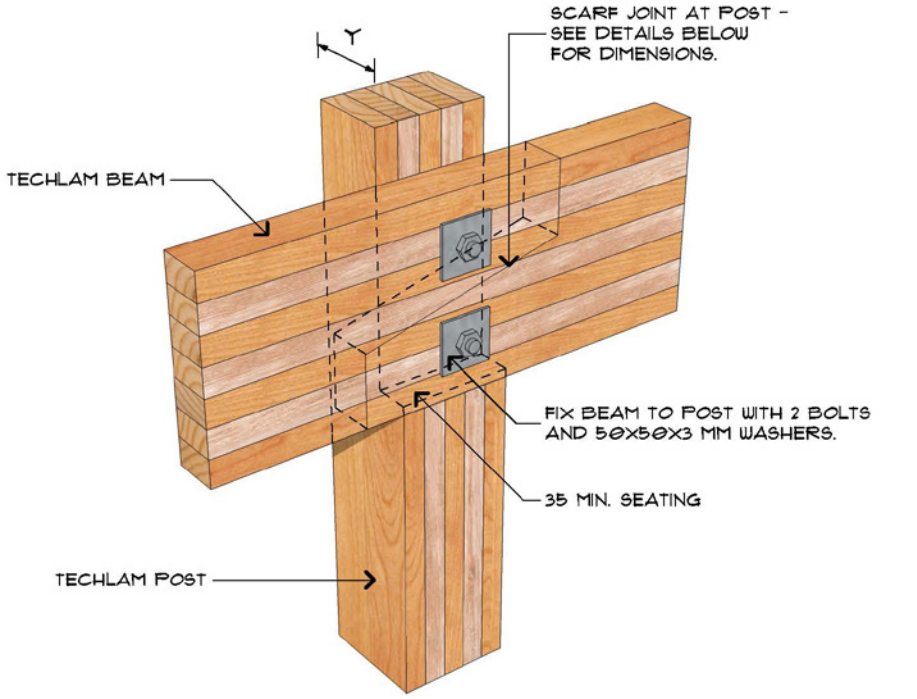
BEAM/POST CONNECTION - TYPE C



X = 50 MIN. FOR M12 BOLTS.
65 MIN. FOR M16 BOLTS

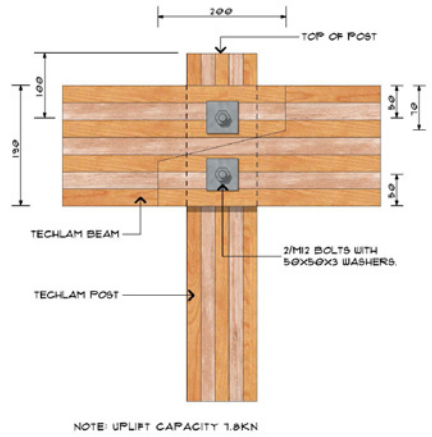
Y = 75 MIN. FOR POSTS SMALLER THAN 180
90 MIN. FOR POSTS 180 OR LARGER.

BEAM/POST CONNECTION - TYPE D



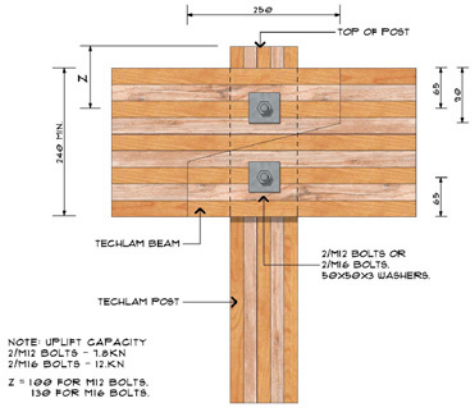
Y = 75 MIN. FOR POSTS SMALLER THAN 180
90 MIN. FOR POSTS 180 OR LARGER

SCARF JOINT AT POSTS



NOTE: UPLIFT CAPACITY 1.8KN

SCARF JOINT AT POSTS - FRONT VIEW (<190 DEPTH)



NOTE: UPLIFT CAPACITY
2/M12 BOLTS - 1.8KN
2/M16 BOLTS - 12.KN

Z = 100 FOR M12 BOLTS.
130 FOR M16 BOLTS.

SCARF JOINT AT POSTS - FRONT VIEW (>240 DEPTH)

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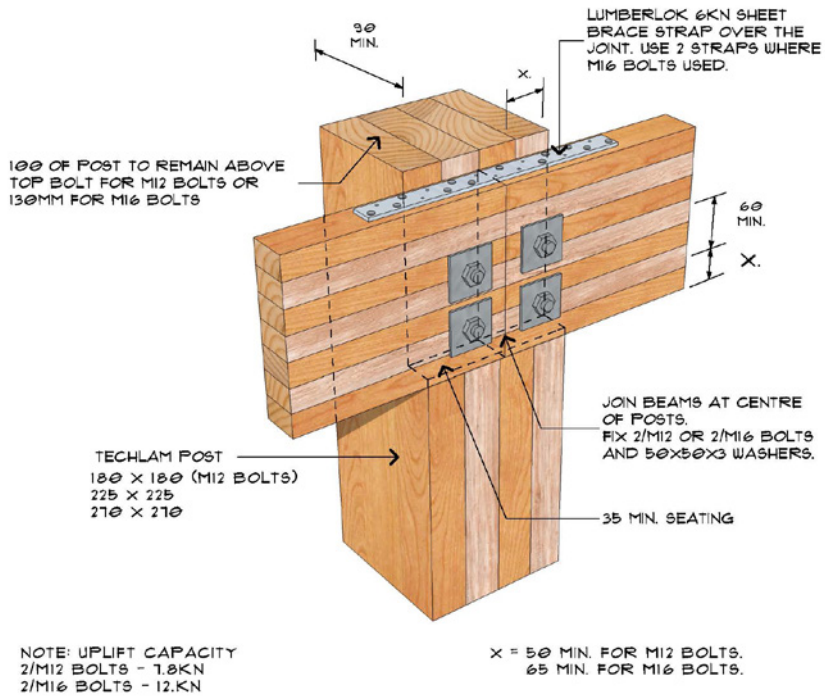

BEAM SPLICE FOR 180X180 OR LARGER POSTS

6 Handling

- Glulaminated Timber Products must not be dropped, jarred or dragged.
- Care should be taken to prevent damage to surfaces.
- Protection must be used against strops, chains or wire ropes when loading, unloading or transporting. We recommend the use of webbing slings to avoid damaging members, and product should be lifted on its edge (as the product would sit in its final position).
- Use spreaders where applicable on long members and locate slings to ensure a well-balanced load and support.
- Control the product with guy lines when moving.
- Care should be taken not to over-stress Techlam Laminated products during transport and erection.

7 Storage

- Prior to installation all Techlam components must be stacked on level bearers, at least 150mm clear of the ground.
- Where Techlam products are supplied with a protective wrapping,retain the wrap for as long as possible through the construction process.
- If Techlam products have been factory sealed or pre-primed, this coating is designed for short term protection only during the construction period.

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